REMARKS

Claims 1-3, 6-14, and 17-28 are pending in this application for the Examiner's review and consideration. Claims 4, 5, 15, and 16 have been canceled without prejudice. Applicants reserve the right to file one or more divisional, continuation, or continuation-in-part applications directed to the canceled subject matter. Applicants respectfully request entry of this response and allowance of the claims. No new matter has been added.

I. The Rejection Under 35 U.S.C. § 103 Should Be Withdrawn

Claims 1-3, 6-14, and 17-28 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Lin, *Proceedings of the 1999 International Palm Oil Palm Oil Congress (Chemistry and Technology)*, Feb. 1-6, **1999**, 82-93 ("Lin") as evidenced by *Baileys Industrial Oil and Fat Products*, Vol. 1, Fourth Ed., Swern ed., John Wiley & Sons, New York, **1979**, pp. 383, 394, 399, and 430 ("Bailey's") and in view of Taylor, *Oleagineux*, 31(2), **1976**, pp. 73-79 ("Taylor").

According to the office action, Lin discloses combining palm oil with unsaturated oils such as soybean oil, corn and sunflower oils in proportions of 9:1 and 7:3; the blended oils are then cooled to 20 °C to 3 °C [*sic*, 8 °C] for crystallization and then separated by filtration. The office action alleges that although the fatty acid content of the unsaturated oil is not mentioned in Lin, it is well known in the art to fall within the levels of linoleic, oleic, and linolenic that is set forth in claim 1. The Examiner then asserts, the claim appears to differ from Lin in the recitation of the use of heating in the crystallization process.

According to the office action, Taylor teaches that the slip melting point of palm oil is 63 °C. The office action further alleges,

> [i]t would have been obvious to heat the oil of Lin to a temperature of at least 63 °C in order to form a uniform liquid blend of oils for fractionation upon cooling. The filtration step of Lin is taken to be a low-pressure filter press in claim 2. The ratio of saturation and unsaturation in the fatty acids would have been obvious function of the amount of each of the oils used in the starting blend. The crystallization would have been an obvious function of the cooling rate used in the process. Finally, the used [*sic*] of the oils in foods would have been an obvious matter of choice with regard to the particular edible oil that was available.

Applicants believe that the pending claims are non-obvious over Lin in view of Taylor and/or Baileys. In particular, claim 1 recites:

> A blending and fractionation process for obtaining an oil composition, the process including the steps of:
>
> (a) blending a vegetable oil with an unsaturated oil having an oleic content of more than 20% and linoleic and linolenic contents of more than 30% in a predetermined ratio to form a mixture;
>
> (b) heating the mixture at a temperature of between 50 °C to about 65 °C until all crystals are melted;
>
> (c) cooling the liquid obtained from step (b) to produce nucleation and obtain a mixture of oil and crystals wherein the crystals are of a suitable size and shape which permit efficient separation of the oil and crystals; and
>
> (d) separating the mixture of oil and crystals to obtain the oil composition,
>
> wherein said oil composition contains saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids in a ratio of about 1:1:1

According to the office action, the Examiner bases his rejection in part on the fact that Taylor at page 74 allegedly discloses "that the slip melting point of palm oil is 63 °C. So it would have been obvious to heat palm oil to a [*sic*, temperature] of at least 63C prior to cooling in order to melt all of the crystals typically found in the oil." However, the Examiner is taking the disclosure out of context. Taylor actually discloses:

> it will be seen that the slip melting point of the top fraction is approx. 63 °C. This means that the oil must be heated to a temperature higher that this before cooling commences, in order to ensure all crystal nucleii are completely melted. If any nucleii are present when the cooling starts, they can affect the crystal formation. Generally, speaking, the oil is heated to 70 °C at least, before cooling. (Our emphasis added).

(*See* Taylor at page 74).

Thus, Taylor actually teaches away from the claimed invention, which recites, *inter alia*, heating the mixture at a temperature of between 50 °C to about 65 °C until all crystals are melted. Based on the disclosure of Taylor one of ordinary skill in the art would not heat the palm oil to a temperature of between 50 °C to about 65 °C but rather would heat to a temperature of at least 70 °C.

The office action then alleges that "the ratio of saturation and unsaturation in the fatty acids would have been an obvious function of the amount of each of the oils used in the starting blend." The office action further alleges:

> [i]t is appreciated that the exact ratio of saturated fatty acids to monounsaturated fatty acids to polyunsaturated fatty acids is not mentioned; it would have been obvious to calculate this value from the fatty acid content of the palm oil/vegetable oil blend. Even though the blend ratio in Lin does not provide these ratios in the unfractionated oil blend, one of ordinary skill in the art might expect the fractionated oil to provide a ratio of fatty acids that is closer to that shown in claim 1. Assuming *arguendo* that this is technically incorrect, it is not seen that the ratio of fatty acids in the final blend constitutes an unobvious step in the method claims.

However, this bare assertion is unequivocally incorrect. In particular, it is not possible to calculate the fatty acid ratios that are obtained after fractionation based on the starting blends composition.

Linn discloses that the fatty acid composition shows palmitic acids should be below 35%, preferably below 31% for a more stable palm olein to remain clear. As for oleic acid and linoleic acids, the values should preferably be above 48% and 15%, respectively. According to Lin, palm oil was mixed with unsaturated oils such as soyabean, corn, and subflower oils in proportions of 9:1 and 7:3. Table 2 illustrates the fatty acid composition of palm olefins. According to table 2, the ratios of saturated fatty acids:monounsaturated fatty acids:polyunsaturated fatty acids is 1:1:0.3 for iodine value ("IV") < 60; 0.8:1:0.3 for IV 60-64; and 0.7:1:03 for IV > 65.

The claims are directed to processes and product derived therefrom comprising blending a vegetable oil with an unsaturated oil having an oleic content of more than 20% and linoleic and linolenic contents of more than 30% in a predetermined ratio to form a mixture. The ratio of saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids in the oil subsequently obtained from fractionation has a ratio of about 1:1:1.

Thus, the claims encompass a ratio of saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids of about 1:1:1 after fractionation. The fatty acids are distributed in the complex mixtures of triacylglycerols, and therefore it would not be obvious or possible for a person of ordinary skill in the art to predict the final ratio after fractionation even if the starting blends in the composition were known. Indeed, the specification discloses that there is the advantage of obtaining liquid fraction containing compositions of saturated fatty acids:monounsaturated fatty acids:polyunsaturated acids in the ratio of 1:1:1. (*See*

published application at paragraph [0019]). The advantage of such oil composition is seen in the American Heart Association ("AHA") step 1 diet, recommended by the AHA. One of ordinary skill in the art, upon reading the cited references, may start with blends with a ratio of 1:1:1 for the three types of fatty acids (*i.e.*, saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids), but the references provide no teaching or suggestion to of fractionation to obtain a final ratio of 1:1:1. Even if one of ordinary skill in the art was motivated to carry out fractionation on the blended oils, it would not be obvious what ratio of the blended oils to use in order to obtain a final ratio of 1:1:1 after fractionation. Applicants again stress if one of ordinary skill in the art had blended the oils such that the ratio was 1:1:1 for the three types of fatty acids before fractionation, one of ordinary skill in the art would not get the same ratio after the blended oils have been fractionated. An oil product which has undergone blending and fractionation and having a ratio of 1:1:1 for the three types of fatty acids would not have similar properties as an oil having the same ratio of the fatty acids but which has undergone blending without fractionation.

Applicants respectfully submit that the ratio of fatty acids in the final blend affects the quality and cloudiness of the oil composition. Moreover, when a vegetable oil such as palm oil is blended with one or more unsaturated oils, the types of fatty acids and their relative proportions in the blended oil can be ascertained via calculation derived from the known composition and known relative proportions of the fatty acids in the starting materials (*i.e.*, in the vegetable oil such as palm oil and in each of the unsaturated oils) prior to the blending. However, after fractionation, the fatty acid composition in the blended oil is not the same as that prior to fractionation (*i.e.*, the fatty acid composition in the fractionated blended oil cannot be ascertained from the amount of each of the oils used in the starting blend).

Thus, the combination of Linn with Taylor and/or Baileys fails to teach or suggest

1. blending a vegetable oil with an unsaturated oil having an oleic content of more than 20% and linoleic and linolenic contents of more than 30% in a predetermined ratio to form a mixture (Linn discloses that the fatty acid composition shows palmitic acids should be below 35%, preferably below 31% for a more stable palm olein to remain clear. As for oleic acid and linoleic acids, the values should preferably be above 48% and 15%, respectively);

2. heating the mixture at a temperature of between 50 °C to about 65 °C until all crystals are melted (Linn discloses that the oil is heated to 70 °C at least, before cooling); and

3. the oil composition contains saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids in a ratio of about 1:1:1 after fractionation (the combination of Linn with Taylor and/or Baileys does not disclose or suggest a ratio of saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids of about 1:1:1 after fractionation).

Therefore, because the cited references fail to teach or suggest the claimed invention, a *prima facia* case of obviousness has not been established. *In re Royka*

II. Conclusion

It is respectfully submitted that all claims are now in condition for allowance, early notice of which would be appreciated. Should the Examiner disagree, Applicants respectfully request a telephonic or in-person interview with the undersigned attorney to discuss any remaining issues and to expedite the eventual allowance of the claims.

Except for issues payable under 37 C.F.R. 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310.

Respectfully submitted,

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